IN THE CLAIMS

Claims 1-15. (Canceled)

16. (Currently amended) A method for chemical vapor deposition comprising supplying a plurality of chambers with reactant gases from a common gas supply, individually controlling amounts of components of the reactant gases directly provided to each of the chambers with gas flow controllers independently from each other, and removing gas from the chambers via a common gas exhaust system,

wherein a wafer carrier is disposed within each one of the plurality of chambers, wherein the wafer carrier and a top portion of each chamber cooperate to define a generally flat, continuous and unobstructed flow channel such that rotating the wafer carrier effects generally laminar flow of gas through the flow channel intermediate the top portion of each chamber and the wafer carrier.

Claims 17-62. (Cancelled)

63. (Previously presented) A method for chemical vapor deposition, the method comprising:

providing a chamber containing a wafer carrier wherein the wafer carrier and a top portion of the chamber cooperate to define a generally flat, continuous and unobstructed flow channel;

rotating the wafer carrier with a spindle;

effecting generally laminar flow of gas through the flow channel intermediate the top portion of the chamber and the wafer carrier; and

enhancing laminar flow from a reaction gas inlet formed generally centrally in the chamber to a ring diffuser disposed proximate a periphery of the wafer carrier and a ring seal, wherein the ring seal is disposed around the rotating wafer carrier to bridge the flow channel, and wherein the ring diffuser is comprised of at least one of SiC coated graphite, SiC quartz, or molybdenum.

64. (Original) The method as recited in claim 63, wherein a distance between the wafer carrier and the portion of the chamber is small enough for centrifugal force caused by rotation of the wafer carrier to effect outward movement of gas within the channel.

65. (Original) The method as recited in claim 63, wherein a reaction gas comprises reactants and a distance between the wafer carrier and the portion of the chamber is small enough that a substantial portion of the reactants in the reaction gas contact a surface of a wafer prior to exiting the chamber.

66. (Original) The method as recited in claim 63, wherein a reaction gas comprises reactants and a distance between the wafer carrier and the portion of the chamber is small enough that most of the reactants in the reaction gas contact a surface of a wafer prior to exiting the chamber.

67. (Original) The method as recited in claim 63, wherein a distance between the wafer carrier and the portion of the chamber is small enough to mitigate thermal convection intermediate the chamber and the wafer carrier.

68. (Original) The method as recited in claim 63, wherein the distance between the wafer carrier and the portion of the chamber is less than approximately 2 inch.

69. (Original) The method as recited in claim 63, wherein the distance between the wafer carrier and the portion of the chamber is between approximately 0.5 inch and approximately 1.5 inch.

70. (Original) The method as recited in claim 63, wherein the distance between the wafer carrier and the portion of the chamber is approximately 0.75 inch.

71. (Original) The method as recited in claim 63, further comprising a gas inlet formed above the wafer carrier and generally centrally with respect thereto.

72. (Original) The method as recited in claim 63, wherein the chamber is defined by a cylinder.

73. (Original) The method as recited in claim 63, wherein the chamber is defined by a cylinder having one generally flat wall thereof defining a top of the chamber and a reaction gas inlet is formed at approximately a center of the top of the chamber.

74. (Original) The method as recited in claim 63, further comprising introducing gas into the chamber via a reaction gas inlet is disposed generally coaxially with respect to axis of the wafer carrier.

75. (Original) The method as recited in claim 63, wherein reaction gas is introduced into the chamber via a gas inlet which has a diameter which is less that 1/5 of a diameter of the chamber.

76. (Original) The method as recited in claim 63, wherein reaction gas is introduced into the chamber via a gas inlet which has a diameter which is less than approximately 2 inches.

77. (Original) The method as recited in claim 63, wherein reaction gas is introduced into the chamber via a gas inlet which has a diameter which is between approximately 0.25 inch and approximately 1.5 inch.

78. (Original) The method as recited in claim 63, wherein a reaction gas is constrained to flow generally horizontally.

79. (Previously presented) The method as recited in claim 63, wherein a reaction gas is constrained to flow generally horizontally through the flow channel defined by cooperation of the chamber and the wafer carrier.

80. (Original) The method as recited in claim 63, wherein a reaction gas is caused to flow outwardly at least partially by a rotating wafer carrier.

81. (Original) The method as recited in claim 63, wherein at least one reaction gas flows out of the chamber via an outlet formed in the chamber above a wafer carrier.

82. (Original) The method as recited in claim 63, wherein at least one reaction gas outlet is formed in the chamber above a wafer carrier and below a top of the chamber.

83. (Original) The method as recited in claim 63, wherein:

a reaction gas inlet is formed generally centrally in the chamber;

at least one reaction gas outlet is formed in the chamber; and

the wafer carrier is disposed within the chamber below the gas outlet(s) so as to define a flow channel intermediate a top of the chamber and the wafer carrier such that reaction gas flows into the chamber through the reaction gas inlet, through the chamber via the flow channel, and out of the chamber via the reaction gas outlet.

84. (Original) The method as recited in claim 63, wherein:

a reaction gas inlet is formed generally centrally in the chamber;

a plurality of reaction gas outlets are formed in the chamber;

the wafer carrier is disposed within the chamber below the gas outlets so as to define a flow channel intermediate a top of the chamber and the wafer carrier such that reaction gas flows into the chamber through the reaction gas inlet, through the chamber via the flow channel, and out of the chamber via the reaction gas outlet; and

a ring diffuser disposed proximate a periphery of the wafer carrier enhances laminar flow from the reaction gas inlet to the reaction gas outlet.

85. (Original) The method as recited in claim 63, wherein:

a reaction gas inlet is formed generally centrally in the chamber;

a plurality of reaction gas outlets are formed in the chamber;

the wafer carrier is disposed within the chamber below the gas outlets so as to define a flow channel intermediate a top of the chamber and the wafer carrier such that reaction gas flows into the chamber through the reaction gas inlet, through the chamber via the flow channel, and out of the chamber via the reaction gas outlet;

a ring diffuser disposed proximate a periphery of the wafer carrier enhances laminar flow from the reaction gas inlet to the reaction gas outlet, the ring diffuser comprising:

a substantially hollow annulus having an inner surface and an outer surface;

a plurality of openings formed in the inner surface;

a plurality of openings form in the outer surface; and

wherein openings in the inner surface enhance uniformity of reaction gas flow over the wafer carrier.

86. (Original) The method as recited in claim 63, wherein:

a reaction gas inlet is formed generally centrally in the chamber;

a plurality of reaction gas outlets are formed in the chamber above a wafer carrier;

the wafer carrier is disposed within the chamber so as to define a flow channel intermediate a top of the chamber and the wafer carrier such that reaction gas flows into the chamber through the reaction gas inlet, through the chamber via the flow channel, and out of the chamber via the reaction gas outlet;

a ring diffuser disposed proximate a periphery of the wafer carrier enhances laminar flow from the reaction gas inlet to the reaction gas outlet, the ring diffuser comprising:

a substantially hollow annulus having an inner surface and an outer surface;

a plurality of openings formed in the inner surface;

a plurality of openings form in the outer surface; and

wherein the openings in the inner surface are configured so as to create enough restriction to reaction gas flow therethrough so as to enhance a uniformity of reaction gas flow over the wafer carrier.

87. (Original) The method as recited in claim 63, wherein:

a reaction gas inlet is formed generally centrally in the chamber;

a plurality of reaction gas outlets are formed in the chamber above a wafer carrier;

the wafer carrier is disposed within the chamber so as to define a flow channel intermediate a top of the chamber and the wafer carrier such that reaction gas flows into the chamber through the reaction gas inlet, through the chamber via the flow channel, and out of the chamber via the reaction gas outlet; and

a ring diffuser disposed proximate a periphery of the wafer carrier enhances laminar flow from the reaction gas inlet to the reaction gas outlet, the ring diffuser being comprised of a material which is resistant to deterioration caused by heated ammonia.

Claim 88. (Canceled)

89. (Original) The method as recited in claim 63, further comprising:

supporting a plurality of wafers via the wafer carrier; and

mitigating reaction gas flow out of the chamber, other than from the reaction gas outlet, via a seal disposed intermediate the wafer carrier and the chamber

90. (Original) The method as recited in claim 63, further comprising:

supporting a plurality of wafers via the wafer carrier; and

mitigating reaction gas flow out of the chamber, other than from the reaction gas outlet, via a ring seal disposed intermediate the wafer carrier and the chamber.

91. (Currently amended) The method as recited in claim 63, further comprising:

supporting a plurality of wafers via the wafer carrier; and

mitigating reaction gas flow out of the chamber, other than from the reaction gas outlet, via a ring seal disposed intermediate the wafer carrier and the chamber, ~~the ring seal being configured,~~ the ring seal comprising at least one of graphite, quartz, and SiC.

92. (Original) The method as recited in claim 63, further comprising heating at least one wafer disposed within the chamber via a heater assembly disposed outside of the chamber and proximate the wafer carrier.

93. (Original) The method as recited in claim 63, further comprising heating at least one wafer disposed within the chamber via an induction heater assembly disposed outside of the chamber and proximate the wafer carrier.

94. (Original) The method as recited in claim 63, further comprising heating at least one wafer disposed within the chamber via a radiant heater assembly disposed outside of the chamber and proximate the wafer carrier.

95. (Original) The method as recited in claim 63, further comprising:

heating at least one wafer disposed within the chamber via a heater assembly disposed outside of the chamber and proximate the wafer carrier; and

mitigating contact of reaction gas with the heater via a heater purge system.

96. (Original) The method as recited in claim 63, further comprising controlling an amount of reactant gases introduced into the chamber via a gas flow controller.

97. (Original) The method as recited in claim 63, further comprising:

providing a carrier gas to the chamber via a carrier gas inlet in fluid communication with the reaction gas inlet;

providing an alkyl to the chamber via an alkyl inlet in fluid communication with the carrier gas inlet; and

providing ammonia to the chamber via an ammonia inlet in fluid communication with the carrier gas inlet.

98. (Original) The method as recited in claim 63, further comprising:

providing a carrier gas to the chamber via a carrier gas inlet in fluid communication with the reaction gas inlet;

providing an alkyl to the chamber via an alkyl inlet in fluid communication with the carrier gas inlet;

providing ammonia to the chamber via an ammonia inlet in fluid communication with the carrier gas inlet; and

wherein the alkyl inlet and the ammonia inlet are disposed proximate the chamber so as enhance separation of alkyls and ammonia prior to introduction thereof into the chamber.

99. (Original) The method as recited in claim 63, further comprising:

providing an alkyl to the chamber via an alkyl conduit in fluid communication with the reaction gas inlet;

providing ammonia to the chamber via an ammonia conduit which passes through the reaction gas inlet; and

wherein ammonia conduit is configured to maintain separation of alkyls and ammonia prior to introduction thereof into the chamber.

100. (Original) The method as recited in claim 63, further comprising:

providing an alkyl to the chamber via an alkyl conduit in fluid communication with the reaction gas inlet;

providing ammonia to the chamber via an ammonia conduit which passes through the reaction gas inlet; and

wherein the inner ammonia conduit and the outer alkyl conduit are configured to maintain separation of alkyls and ammonia prior to introduction thereof into the chamber.

101. (Original) The method as recited in claim 63, further comprising:

providing an alkyl to the chamber via an alkyl conduit in fluid communication with the reaction gas inlet;

providing ammonia to the chamber via an ammonia conduit which passes through the reaction gas inlet; and

wherein the inner alkyl conduit and the outer ammonia conduit are configured to maintain separation of alkyls and ammonia prior to introduction thereof into the chamber.

102. (Original) The method as recited in claim 63, further comprising:

providing a first gas to the chamber via an outer;

providing a second gas to the chamber via an inner tube disposed at least partially within the outer; and

wherein the outer tube and the inner tube are configured so as to enhance separation of first and second gases prior to introduction thereof into the chamber.

103. (Original) The method as recited in claim 63, further comprising:

providing a first gas to the chamber via an outer;

providing a second gas to the chamber via an inner tube disposed at least partially within the outer; and

wherein the outer tube and the inner tube are configured generally concentrically with respect to one another, so as to enhance separation of alkyls and ammonia prior to introduction thereof into the chamber and so as to enhance mixing of the alkyls and ammonia subsequent to introduction thereof into the chamber.

104-130. (Canceled)

131. (Currently amended) A method for chemical vapor deposition, the method comprising:

providing a plurality of reactor chambers;

providing reaction gases to the chambers via a common gas supply;

individually controlling amounts of components of the reaction gases directly provided to each of the chambers with gas controllers independently from each other; and

removing gases from the chambers via a common gas exhaust system,

wherein a wafer carrier is disposed within each one of the plurality of reactor chambers, wherein the wafer carrier and a top portion of each reactor chamber cooperate to define a generally flat, continuous and unobstructed flow channel such that rotating the wafer carrier effects generally laminar flow of gas through the flow channel intermediate the top portion of each chamber and the wafer carrier.

132. (Currently amended) The method as recited in claim 131, further comprising supporting less than twelve wafers upon [[a]] the wafer carrier disposed within each chamber.

133-160. (Canceled)